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# THE FARM INDEX

ECONOMIC RESEARCH SERVICE ★ U.S. DEPARTMENT OF AGRICULTURE ★ OCTOBER 1966

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for U.S. Farm Exports

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# economic trends

| ITEM  | UNIT OR<br>BASE PERIOD | '57-'59<br>AVERAGE | 1965               |                    | 1966               |        |        |
|---|------------------------|--------------------|--------------------|--------------------|--------------------|--------|--------|
|   |                        |                    | YEAR               | AUGUST             | JUNE               | JULY   | AUGUST |
| <b>Prices:</b>  |                        |                    |                    |                    |                    |        |        |
| Prices received by farmers                                    | 1910-14=100            | 242                | 248                | 249                | 264                | 267    | 272    |
| Crops   | 1910-14=100            | 223                | 232                | 223                | 241                | 245    | 241    |
| Livestock and products  | 1910-14=100            | 258                | 261                | 272                | 283                | 285    | 298    |
| Prices paid, interest, taxes and wage rates                   | 1910-14=100            | 293                | 321                | 321                | 333                | 334    | 335    |
| Family living items   | 1910-14=100            | 286                | 306                | 305                | 314                | 315    | 317    |
| Production items  | 1910-14=100            | 262                | 276                | 277                | 283                | 285    | 287    |
| Parity ratio  |                        | 83                 | 77                 | 77                 | 79                 | 80     | 81     |
| Wholesale prices, all commodities                             | 1957-59=100            | —                  | 102.5              | 102.9              | 105.7              | 106.4  | 106.8  |
| Commodities other than farm and food                          | 1957-59=100            | —                  | 102.5              | 102.7              | 104.9              | 105.2  | 105.2  |
| Farm products   | 1957-59=100            | —                  | 98.4               | 99.1               | 104.2              | 107.8  | 108.1  |
| Food, processed   | 1957-59=100            | —                  | 105.1              | 106.7              | 110.6              | 111.7  | 113.8  |
| Consumer price index, all items                               | 1957-59=100            | —                  | 109.9              | 110.0              | 112.9              | 113.3  | —      |
| Food  | 1957-59=100            | —                  | 108.8              | 110.1              | 113.9              | 114.3  | —      |
| <b>Farm Food Market Basket: <sup>1</sup></b>                  |                        |                    |                    |                    |                    |        |        |
| Retail cost   | Dollars                | 983                | 1,042              | 1,059              | 1,094              | 1,099  | —      |
| Farm value  | Dollars                | 388                | 409                | 417                | 436                | 445    | —      |
| Farm-retail spread  | Dollars                | 595                | 633                | 642                | 658                | 654    | —      |
| Farmers' share of retail cost                                 | Per cent               | 39                 | 39                 | 39                 | 40                 | 40     | —      |
| <b>Farm Income:</b>   |                        |                    |                    |                    |                    |        |        |
| Volume of farm marketings                                     | 1957-59=100            | —                  | 119                | 116                | 107                | 111    | 117    |
| Cash receipts from farm marketings                            | Million dollars        | 32,247             | 39,187             | 3,200              | 3,121              | 3,279  | 3,540  |
| Crops   | Million dollars        | 13,766             | 17,334             | 1,292              | 1,130              | 1,408  | 1,403  |
| Livestock and products  | Million dollars        | 18,481             | 21,853             | 1,908              | 1,991              | 1,871  | 2,137  |
| Realized gross income <sup>2</sup>                            | Billion dollars        | —                  | 44.9               | —                  | 48.7               | —      | —      |
| Farm production expenses <sup>2</sup>                         | Billion dollars        | —                  | 30.7               | —                  | 32.5               | —      | —      |
| Realized net income <sup>2</sup>                              | Billion dollars        | —                  | 14.2               | —                  | 16.2               | —      | —      |
| <b>Agricultural Trade:</b>                                    |                        |                    |                    |                    |                    |        |        |
| Agricultural exports  | Million dollars        | 4,105              | 6,229 <sup>3</sup> | 459                | 551                | 491    | —      |
| Agricultural imports  | Million dollars        | 3,977              | 4,088 <sup>3</sup> | 319                | 387                | 343    | —      |
| <b>Land Values:</b>   |                        |                    |                    |                    |                    |        |        |
| Average value per acre  | 1957-59=100            | —                  | 139                | 139 <sup>4</sup>   | 150 <sup>4</sup>   | —      | —      |
| Total value of farm real estate                               | Billion dollars        | —                  | 159.4              | 159.4 <sup>4</sup> | 171.1 <sup>4</sup> | —      | —      |
| <b>Gross National Product: <sup>2</sup></b>                   |                        |                    |                    |                    |                    |        |        |
| Consumption <sup>2</sup>                                      | Billion dollars        | 457.3              | 681.2              | —                  | 732.3              | —      | —      |
| Investment <sup>2</sup>                                       | Billion dollars        | 294.2              | 431.5              | —                  | 460.1              | —      | —      |
| Government expenditures <sup>2</sup>                          | Billion dollars        | 68.0               | 106.6              | —                  | 118.5              | —      | —      |
| Net exports <sup>2</sup>                                      | Billion dollars        | 92.4               | 136.2              | —                  | 149.0              | —      | —      |
| <b>Income and Spending: <sup>5</sup></b>                      |                        |                    |                    |                    |                    |        |        |
| Personal income, annual rate                                  | Billion dollars        | 365.3              | 535.1              | 537.8              | 577.2              | 580.0  | 585.0  |
| Total retail sales, monthly rate                              | Million dollars        | 17,098             | 23,662             | 23,585             | 25,394             | 25,491 | 25,883 |
| Retail sales of food group, monthly rate                      | Million dollars        | 4,160              | 5,577              | 5,568              | 5,975              | 5,953  | —      |
| <b>Employment and Wages: <sup>5</sup></b>                     |                        |                    |                    |                    |                    |        |        |
| Total civilian employment                                     | Millions               | 64.9               | 72.2               | 72.4               | 74.0               | 74.1   | 74.3   |
| Agricultural  | Millions               | 6.0                | 4.6                | 4.6                | 4.2                | 4.1    | 4.2    |
| Rate of unemployment  | Per cent               | 5.5                | 4.6                | 4.5                | 4.0                | 3.9    | 3.9    |
| Workweek in manufacturing                                     | Hours                  | 39.8               | 41.2               | 41.1               | 41.3               | 41.1   | 41.3   |
| Hourly earnings in manufacturing, unadjusted                  | Dollars                | 2.12               | 2.61               | 2.59               | 2.71               | 2.71   | 2.69   |
| <b>Industrial Production: <sup>5</sup></b>                    |                        |                    |                    |                    |                    |        |        |
|   | 1957-59=100            | —                  | 143                | 144                | 156                | 157    | 158    |
| <b>Manufacturers' Shipments and Inventories: <sup>5</sup></b> |                        |                    |                    |                    |                    |        |        |
| Total shipments, monthly rate                                 | Million dollars        | 28,745             | 40,279             | 40,518             | 44,125             | 44,404 | —      |
| Total inventories, book value end of month                    | Million dollars        | 51,549             | 68,015             | 65,788             | 71,949             | 72,930 | —      |
| Total new orders, monthly rate                                | Million dollars        | 28,365             | 41,023             | 40,926             | 45,833             | 45,562 | —      |

<sup>1</sup> Average annual quantities of farm food products purchased by urban wage-earner and clerical-worker households (including those of single workers living alone) in 1960-61—estimated monthly. <sup>2</sup> Annual rates seasonally adjusted second quarter. <sup>3</sup> Preliminary. <sup>4</sup> As of March 1. <sup>5</sup> Seasonally adjusted.

Sources: U.S. Dept. of Agriculture (Farm Income Situation, Marketing and

Transportation Situation, Agricultural Prices, Foreign Agricultural Trade and Farm Real Estate Market Developments); U.S. Dept. of Commerce (Current Industrial Reports, Business News Reports, Advance Retail Sales Report and Survey of Current Business); and U.S. Dept. of Labor (The Labor Force and Wholesale Price Index).



# THE AGRICULTURAL OUTLOOK

This year is turning out much better for agriculture than even the most optimistic forecasts made a year ago.

A very rapid expansion in consumer demand in the first half was augmented by expanding military requirements. At the same time, short supplies of pork limited red meat supplies and contributed to sharply higher prices for livestock products in general.

Net farm income in 1966 will exceed the \$14.2 billion of 1965, possibly by more than \$1.5 billion. The income outcome, of course, still depends to a considerable extent on the 1966 crop outturn and the course of prices in the final months of the year. Prices received by farmers in the first half of this year were up about 9 per cent from a year earlier. Livestock product prices advanced 18 per cent in the first half and for the year may average 10 to 12 per cent above 1965.

Agriculture will move into 1967 with substantially larger supplies of pork, poultry and eggs. Supplies of beef may be smaller if producers withhold breeding stock as expected.

Exports of farm products in 1965/66 were about \$6¾ billion, a half billion dollars above 1964/65. Sizable gains in 1966/67 are being predicted for exports of cotton and tobacco, with further increases for most other major export crops except wheat.

## COMMODITY HIGHLIGHTS

The feed grain supply for 1966/67 is estimated, on the basis of September indications, at 205 million tons. This is down about 5 per cent from 1965/66 and 7 per cent below the 1960-64 average.

Prospects for 1966 feed grain crops improved during August, increasing the September 1 estimate to 157 million tons, only 2 per cent below the record output last year. The carryover of feed grains into 1966/67 is now expected to total about 47 million tons, down nearly 9 million.

Domestic use in 1965/66 is estimated at 141 million tons, 10 million above a year earlier. Exports have also increased sharply to nearly 29

million tons, about a third larger than in 1964/65.

Continued heavy use of feed grains is likely in 1966/67. Accordingly, a further reduction in carryover is in prospect—probably somewhat greater than the shrinkage during the past year.

**Soybean** prices at Chicago (No. 1 yellow) this summer rose to a monthly high of \$3.73 per bushel in August, about \$1 above August 1965. Prices since then have been dropping sharply and in mid-September were at \$3.10 per bushel. This reflects in part the improved crop prospects and the beginning of the harvest of early soybeans.

The 1966 crop was estimated as of September 1 at 926 million bushels, up 65 million from August and 10 per cent above 1965. Despite the improved crop prospects, prices in mid-September were still above year-earlier levels of about \$2.73 per bushel. Demand has increased during the past year.

Farm prices during the heavy harvesting season this fall probably will average well above the 1966 support rate of \$2.50 per bushel, which is 25 cents above the 1965 rate. Last September-December prices for the 1965 crop averaged \$2.38 per bushel, but rose sharply through the rest of the marketing year.

**Vegetable** markets continue to reflect the difficult growing conditions of this past summer. In mid-September, movement of most fresh vegetables into major terminal markets was considerably smaller than a year earlier. Prices generally were much below the extreme levels of midsummer, but still materially higher than a year ago.

**Potato** production this fall, according to indications September 1, is expected to total 203 million hundredweight, down 5 per cent from 1965 but 7 per cent above the 1960-64 average.

Growers in the Eastern States indicated their fall crop tonnage will be up moderately from last year, primarily due to a bigger crop in Maine. However, prospective output is off a tenth in both



the Midwest and West. Production in Idaho, where over half the crop is used for food processing, is estimated 18 per cent smaller than last year and the state's crop is late.

Western prices increased during September and were running moderately above a year earlier. Prices in other areas also were above 1965.

Auction market prices for all **flue-cured tobacco** sold this season through September 21 averaged 69.1 cents per pound, 4.3 cents above the average for the similar period last season.

Demand is strong, the quality of much of the crop is very good and the season average price will set a new record high. The overall level of price support for the 1966 crop is 58.8 cents per pound, about 2 per cent above 1965.

**Hog producers** began expanding production late in 1965 in response to relatively high hog prices. November 1965 marked the upturn in the number of sows farrowing and the buildup has continued each month.

The December 1965-May 1966 pig crop was up 10 per cent from a year earlier, with the bulk of the increase occurring in March-May. The June-August 1966 pig crop in 10 Corn Belt States was reported 7 per cent larger than a year earlier. And September-November farrowings are expected to be up 6 per cent. The expansion apparently is proceeding at a slackening pace.

The expansion in production will continue through next spring, but at a slower rate. Producers stated intentions on September 1 to have 6 per cent more sows farrow in December-February than a year earlier.

The number of hogs and pigs on farms in 10 states on September 1 totaled 46 million head—up 7 per cent from September 1, 1965. The in-

ventory of breeding hogs was 4 per cent higher, while the number of hogs kept for slaughter was up 8 per cent.

About the same percentage of the inventory was being kept for breeding this September 1 as a year earlier.

The increased number of slaughter hogs on farms September 1 and the increase in the number of sows expected to farrow this fall and winter indicate that hog slaughter and pork production will continue moderately above year-earlier levels through most of 1967.

Federally inspected hog slaughter last winter was down sharply and for the first half of 1966 was 9 per cent below a year earlier. However, slaughter in the third quarter was roughly equal to a year earlier and about in line with the inventory of hogs weighing over 120 pounds on June 1. A substantially larger increase in slaughter is expected in the fourth quarter as pigs born in the March-May period reach market weights. Marketings in 1967 will continue above year-earlier levels if producers carry out their September production intentions.

Slaughter hog prices last winter reached record-high levels. Then prices declined sharply from over \$28.00 at eight markets in mid-February to near \$21.50 in late April. Prices rose to around \$26.50 in mid-August, but then dropped again to \$23.00 by mid-September.

The current price weakening represents a seasonal trend, in contrast to the contraseasonal rise last fall and early winter.

Hog prices are expected to continue downward into early winter. As marketings decline late next winter, some price strength will likely develop and continue generally through the spring of 1967. Such a pattern would be the reverse of the price movements during the first half of 1966.

***Numbers in parentheses at end of stories refer to sources listed below:***

1. M. D. Skold and A. W. Epp, Optimal Farm Organizations for Irrigated Farms in South Central Nebraska, Nebr. Agr. Expt. Sta. Res. Bul. 222 (P\*); 2. P. T. Allen and others, The Balance Sheet of Agriculture, 1966, AIB-314 (P); 3. Economic Development Division, Rural People in the American Economy, AER (M); (4) N. L. Le Ray and W. W. Reeder, Ex-Farm Operators in a Low-Income Area, Cornell Univ. Agri. Expt. Sta. Bul. 67-1 (P\*); 5. W. A. Green (SM);

6. W. E. Clement, Commodity Promotion as a Tool for Expanding Outlets for Food (S); 7. Q. M. West, Foreign Supply and Demand Projections: Outlook for U.S. Agricultural Exports (S); 8. F. J. Poats (SM); 9. R. E. Nipp (SM).

*Speech (S); published report (P); unpublished manuscript (M); special material (SM); \*State publications may be obtained only by writing to the experiment station or university cited.*



# TEXTBOOK APPROACH TO PROFIT

*There's no such thing as a model farm. But the economic model, with its theoretical solutions to changes in price-cost-resource patterns, can suggest ways to turn theory into actual increases in farm returns.*

Change is the common denominator of farming—and of the successful farmer.

South central Nebraska is no different from the rest of the country. Take just two of the major changes in farming that have taken place—the use of irrigation and the size of farm.

In 1950, fewer than 800 farms in the south central region of the state had irrigation facilities and they irrigated only 60,000 acres. By 1959, some 4,900 farms were irrigating 527,000 acres, a figure that increased another third by 1963.

While turning to more intensive

agriculture, the farmers were also expanding their operations. In 1959 the average farm had 271 acres, up 20 per cent on the average from 1950.

Both changes indicate the farmers in the area have taken advantage of current economic and technological conditions. But few managers ever wrest the last ounce of profit from all the factors of production.

The computerized tools of the economists sketch out the wider boundaries of earnings, the difference between turning an adequate profit and reaching the profit obtainable when all conditions are pushed to their optimum.

A recent study by economists at the University of Nebraska, in cooperation with the Economic Research Service, outlines some of the profit potential at different price levels for six different types of farms in the area.

Here are three farm organization patterns for one of the farm types analyzed—a medium size farm using moderate irrigation. The calculations suggest the response for maximum profit when feed grain and livestock prices are all at low, medium or high levels. These farms have between 260

acres and 499 acres, irrigate an average of 84 acres and dry farm another 151 acres. The study is based on resources available in 1961.

When product prices are lowest, the medium size farm achieves the greatest profit by farrowing 66 litters of pigs, feeding 67 head of calves. The number of calves is limited by available pasture.

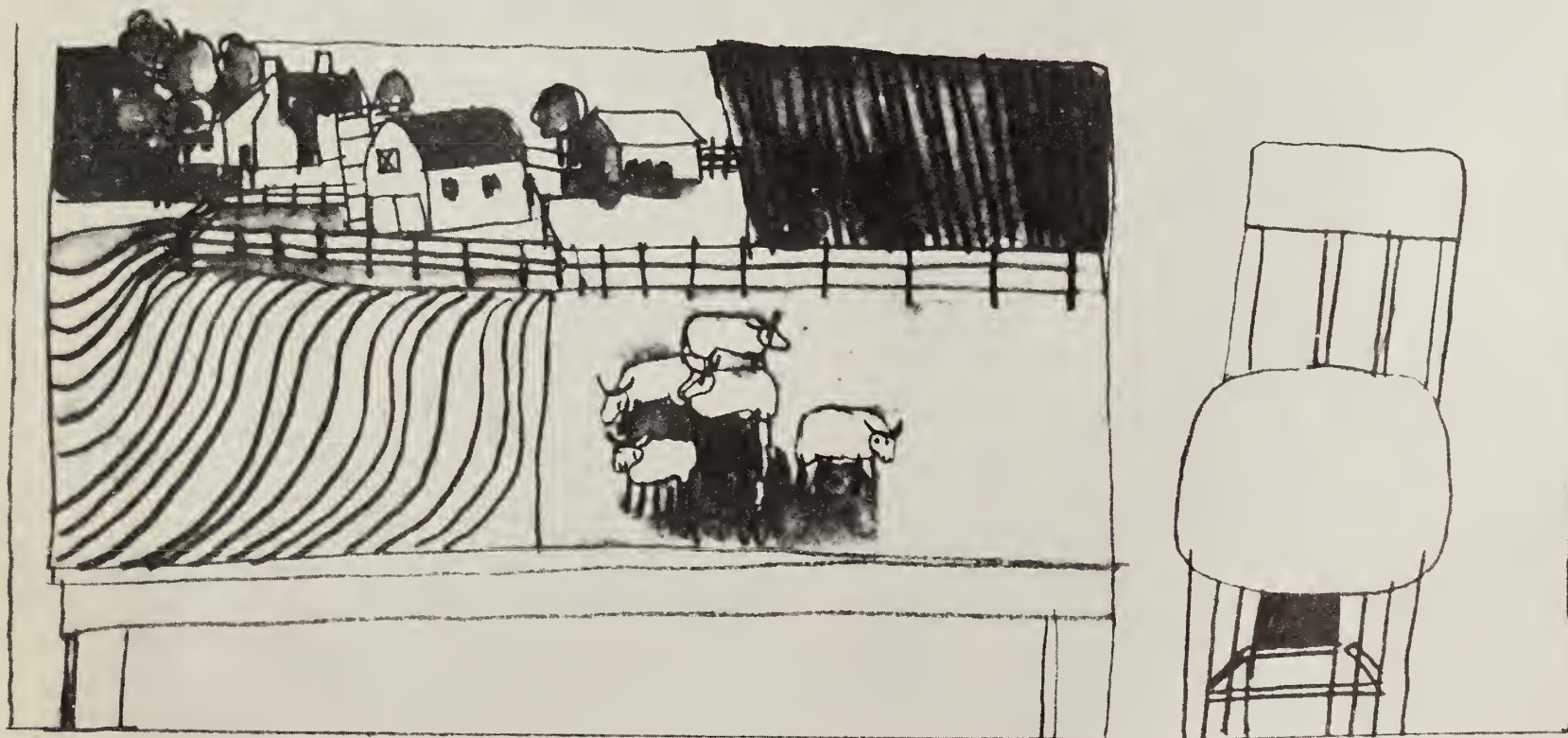
Most of the irrigated land is planted to corn; four acres are devoted to corn silage.

The farmer grows wheat to the extent of his allotment and alfalfa and rotation meadow in proportion to the level of the beef and pork enterprises.

With low prices for feed grains, soybeans preempt the dryland from grain sorghum.

From a production pattern such as this, the return to family labor and management is \$7,955.

When all product prices are shifted from the lowest level to a medium one, the basic farm pattern remains much the same. Cattle fed increase by 19 head, however, and dryland soybeans drop out of the picture entirely, with grain sorghums taking up most of this acreage. No feed grain is purchased with this combination





of enterprises on the farm.

The return to family labor and management increases some 80 per cent to \$14,151.

Most of the same shifts occur when prices are pushed to the limits set by the model.

There's a slight increase in the litters farrowed and about a fifth more cattle fed. The dryland acreage for grain sorghums continues to increase but dryland wheat is cut by more than a fourth.

The return to the operator's family labor and management runs to \$20,658.

The cropping plans established for the model farms are little different from typical operations in the area, though more land is devoted to roughage than usual.

Despite the limited changes, the returns to family labor and management are considerably higher than they are generally. The models, however, work within a framework of certainty about prices and technology, a high degree of management skill and completely flexible resources.

Furthermore, the models do not consider varying the amounts of labor or purchasing or irrigating more land. (1)

## Accounts for the Nation's Farms Show Total Assets Are Up by \$18.2 Billion

If American agriculture were one vast business firm, this is what its balance sheet would have looked like at the beginning of this year:

Total assets stood at \$255.8 billion at the beginning of 1966, up from \$237.9 billion a year earlier. This amounted to a 7.5 per cent climb. As such, the percentage was just about double the rate of increase for the previous year.

Equities of farmers and other owners of farm property rose \$13.8 billion during 1965, or 6.9 per cent. The dollar increase was the largest since 1950-51, the beginning of the Korean conflict.

Farm real estate was again the major factor causing the rise in the value of assets.

With farmland in the Corn Belt leading the way, total value of farm real estate climbed to \$171.1 billion, an increase of 7.3 per cent from a year earlier.

During the past decade, farmland prices have increased at an average annual rate amounting to 5.6 per cent.

The value of the livestock inventory rose sharply during 1965. By the beginning of 1966, the inventory had climbed to \$17.5 billion, up \$3.1 billion from a year earlier.

This climb, equal to a 22 per cent rise, was one of the largest annual increases in recent years. Every class of livestock and poultry increased in value in 1965. Livestock prices continued to increase in January and February of this year, but have trended downward since then.

Machinery and motor vehicle inventories also rose in value, up \$1.8 billion during 1965, a rise of 6.8 per cent.

Crop inventories also were up, by 7.6 per cent. The rise was chiefly the result of larger stocks of soybeans, hay and corn.

Total farm debt (excluding CCC loans) at the beginning of 1966 was estimated at \$40.2 billion, an increase of 11 per cent from a year earlier. The absolute increase during the year of \$4.2 billion was the largest in the post-war period.

The increase in the real estate debt—\$2.3 billion—in 1965 was slightly greater than the large increase of a year earlier.

But the increase in non-real estate indebtedness—\$1.9 billion—was more than twice as large as the increase that took place during 1964. During 1965 the substantial increase in non-real estate credit was influenced, in part, by the higher prices paid for livestock for restocking feedlots.

Realized net income of farm operators, at \$14.2 billion in 1965, was up sharply from a year earlier. The increase was due largely to higher returns from livestock and livestock products.

Expanding demand for farm products and some curtailment of production of meat animals were largely responsible for a 5 per cent rise in prices received by farmers in 1965. At the same time, prices paid by farmers rose 2.5 per cent. (2)

**THE PROFIT POTENTIAL:** These farm schemes have been programmed for maximum profit, based on 1961 conditions in south central Nebraska. They work only within the theoretical structure. But the principle applies to any part of the country. Adjustments throughout make the difference.

| Enterprise                            | Unit          | Prices     |         |         |
|---------------------------------------|---------------|------------|---------|---------|
|                                       |               | Feed grain | \$ 0.74 | \$ 0.94 |
|                                       |               | Pork       | 11.40   | 14.28   |
|                                       |               | Beef       | 15.86   | 20.02   |
|                                       |               |            |         | \$ 1.14 |
|                                       |               |            |         | 17.15   |
|                                       |               |            |         | 24.18   |
| Litters farrowed                      | Number        | 66         | 67      | 64      |
| Cattle fed                            | Head          | 67         | 86      | 103     |
| Grain sorghums (dryland)              | Acres         | 0          | 43      | 54      |
| Grain sorghums (irrigated)            | Acres         | 0          | 0       | 0       |
| Corn (irrigated)                      | Acres         | 80         | 79      | 77      |
| Sorghum silage (dryland)              | Acres         | 0          | 0       | 0       |
| Corn silage (irrigated)               | Acres         | 4          | 5       | 7       |
| Oats (dryland)                        | Acres         | 0          | 0       | 0       |
| Soybeans (dryland)                    | Acres         | 49         | 0       | 0       |
| Soybeans (irrigated)                  | Acres         | 0          | 0       | 0       |
| Wheat (dryland)                       | Acres         | 60         | 60      | 43      |
| Alfalfa (dryland)                     | Acres         | 24         | 30      | 37      |
| Alfalfa (irrigated)                   | Acres         | 0          | 0       | 0       |
| Rotation meadow (dryland)             | Acres         | 18         | 17      | 16      |
| Pork sold                             | Hundredweight | 1,397      | 1,419   | 1,351   |
| Beef sold                             | Hundredweight | 432        | 544     | 650     |
| Feed grain purchased                  | Hundredweight | 694        | 0       | 0       |
| Return to family labor and management | Dollars       | 7,955      | 14,151  | 20,658  |



# AID FOR AILING RURAL ECONOMIES

*Here's a list of recent federal legislation aimed at helping low-income rural communities re-enter America's economic mainstream.*

Modern technology has been the boon and bane of rural America.

The mechanization of agriculture and the development of new industries have meant a new lease on life for many rural communities. But these same forces have sounded the death knell for others.

The farm community depopu-

lated by mechanization and farm enlargement; the rural town that once flourished with manufacturing enterprises now become obsolete; the bypassed railroad center; the coal mining community—all are examples of rural areas which have lost their place in our modern economy.

Re-entry into America's economic mainstream is not an easy matter for such areas. Often poverty and unemployment have persisted for so long that economic opportunity is lacking. People, especially the young, have moved out in great numbers; the tax base has shrunk. Consequently, these distressed areas cannot by themselves support the schools, the job training and placement services and the community leadership to adjust to today's economic needs.

To help these towns and re-

gions help themselves, a number of federal anti-poverty laws have been enacted during the 1960s.

First was the Area Redevelopment Act of 1961 which provided federal loans for the development of land and buildings for industrial purposes and for the improvement of community facilities. Next came a series of laws granting federal aid for retraining the unemployed: the Manpower Development and Training Act of 1962, the Vocational Education Act of 1963 and the Economic Opportunity Act of 1964.

The Manpower Act offers training and retraining in both farm and nonfarm skills and grants subsistence and transportation allowances for those needing such aid while in training.

The Vocational Education Act provides federal aid to states on a matching basis for vocational edu-





cation for high school students (including dropouts and graduates) and for adults who need retraining to hold or upgrade their jobs. The act also expanded the scope of vocational agriculture courses to include related occupations in processing, distribution and service industries as well as nonfarm industries.

The Economic Opportunity Act includes several training provisions of special importance to rural workers. One is the adult basic education program. Its aim is to teach people to read and write in order to qualify for better jobs or occupational training courses. Another provision grants federal aid for special help in education and vocational training for migrants and other seasonal farmworkers. Programs designed for the unusual needs of this group of workers include: accelerated school programs to shorten the school year for migrants; adult remedial education programs; remedial summer school work for youth; and training for teachers of migratory children.

In addition to training programs, federal support is available to poverty areas through funds for public works and development planning. It is also felt that many national efforts to alleviate unemployment and improve income can be carried out more effectively on a regional basis.

The Appalachian Regional Development Act, passed last year, provides for the planning and development of resources, public facilities and employment opportunities through coordinated federal-state-local programs.

This was followed by the Public Works and Economic Development Act, which is designed to promote development of growth centers and extend the approach of the Appalachian Act to other regions. Early in 1966 three economic development regions in addition to Appalachia were named: The Ozarks, Upper Great Lakes and New England. (3)

## Lack of Family Help, Not Lack Of Finances, No. 1 Reason Farmers Quit

When a farmer becomes an ex-farmer, the natural question to ask is *why*?

In 1962 economists at the Cornell Agricultural Experiment Station in cooperation with ERS posed this question to 85 ex-farmers in a low-income dairy area in northern New York.

The men queried were part of a larger group of 306 farmers selected in 1950 for the purpose of studying the job adjustments made by farmers over a period of time. All of the men in the study group were under 55 years of age in 1950 and still living in the area in 1962.

### Correction

In the September 1966 *Farm Index* an error appeared in the story *The Rural Box*. The story inaccurately stated that grants were available.

No grants are available under the rural loans section (administered by USDA's Farmers Home Administration) of the Economic Opportunity Act of 1964.

The program as passed by Congress does provide (1) loans up to \$2,500 at 4½ per cent interest, repayable over 15 years and available to individual low-income rural families and (2) loans of no fixed limit at 4½ per cent interest and repayable over 30 years to cooperative associations having a membership at least two-thirds of whom are low-income rural families.

Since the program began in January 1965, through September 16, 1966, loans totaling \$49 million have been made to over 30,000 individual rural families. The loans have helped the families finance some 400 different types of small business and service enterprises, ranging all the way from welding shops, blacksmith shops, television repair to wood cutting and farm development.

In addition, 530 cooperatives have received loans totaling \$6.2 million to provide services, supplies or facilities. (9)

Surprisingly, it wasn't always a question of finances that caused a man to leave farming. A lack of family help or interest in the business was the No. 1 reason the ex-farmers gave for quitting. And a close second was poor health of the operator or a member of his family.

Nearly 20 per cent of the men said that the inability to hold down both a farm job and an off-farm job was a big factor in their decision to leave. Whenever there was a real conflict between the two jobs, it was farming that was dropped.

Other reasons for quitting (in the order of frequency mentioned) were: couldn't make a go of farming financially, no opportunity without expansion and an off-farm job seemed more attractive—better pay, shorter hours or better health and retirement benefits.

In addition to *why*, the ex-farmers were also questioned about *what* made their shift out of farming possible. For most it was the availability of another source of income—in many cases, an off-farm job. However, many of the men also said they had an opportunity or were forced to sell their land, livestock or equipment sometime during the 12-year study period.

Were the ex-farmers better off financially after they left? A comparison of net farm income showed that of the group that had quit farming, nearly 80 per cent had incomes of less than \$3,000 in 1950; only 63 per cent of the group that stayed in farming were earning under \$3,000. In 1962, 15 per cent of the ex-farm group and nearly 28 per cent of the farm group were still averaging incomes of under \$3,000.

In other words, some of the ex-farmers had improved their fortunes by quitting farming. However, a high proportion of both groups—those that stayed and those that left—were still living at low income levels. (4)



This is ERS . . .

*This is the seventh in a series of articles on the seven divisions that make up the Economic Research Service. The series highlights the research studies and findings that help to answer the perennial ifs in American agriculture.*

## NATURAL RESOURCE ECONOMICS

Drought in the Northeast. Floods in the Midwest. One million acres of land a year going into cities and highways. Soaring demands for outdoor recreation. A new urgency for pollution control and concern with natural beauty.

There's been a revolution in the last few years in the nation's thinking about how and when and why to develop and preserve our natural resources.

This thinking is now being translated into a dazzling array of new laws, new commissions and rural districts for the long-term conservation and use of our land and water. Studying the problems and the proposed programs to determine their impact on agriculture is a major task of ERS's Natural Resource Economics Division (NRED).

Take one example: In no section of the country is the water problem more acute or more complex than in the Pacific-Southwest Region. This vast region takes in southern California, Nevada, Utah, Arizona and parts of other states.

This is a region of fast growing cities and booming industry. Both draw heavily on the surface and ground water needed for agricultural use. Much of the region gets its water from the Colorado River. But the Colorado, like other rivers and streams in the area, is declining in quality with the increase of salt, sediment and other pollutants.

The problem shows up in the courts, in conflict between states and in disputes between the United States and its neighbors.

How is it to be solved? And at what cost? By importing water from the Pacific-Northwest? By even more ambitious and complicated schemes to import water from Canada and Alaska? By costly processes to take the salt out of sea water?

In the absence of such costly developments, economic growth in the region may be thwarted. There will be less water to pro-

California or Arizona? Would the production capacity of the nation be adequate to satisfy the long-term demand for food and fiber? If so, what would be the economic cost?

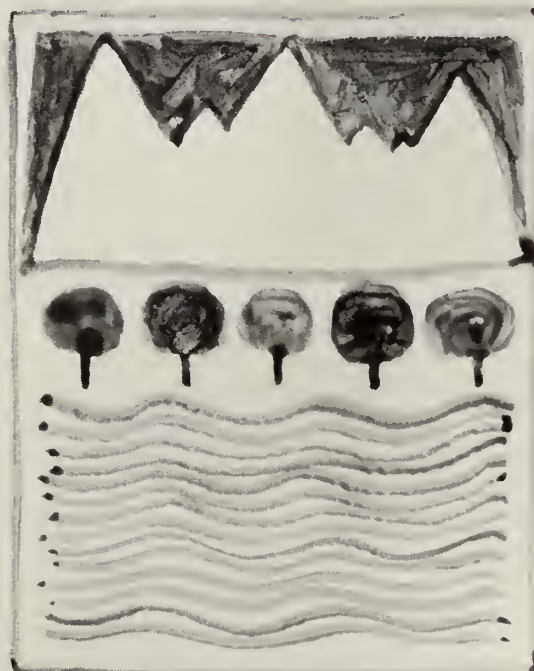
One of the main responsibilities for the Division specialists is to develop long-range economic projections that will bear on these problems. They also appraise the nature and extent and economic effects of drought, flood, poor land drainage, land erosion and sedimentation in the water itself.

Finally, NRED specialists assess the economic effects on agriculture of alternative policies. Such greater awareness also demands more sophisticated tools of analysis to guide the investor—both public and private—as he commits himself to future investment. Along with the national policies and the analytical tools, the local and regional economies need more effective institutions, institutions better structured to manage our natural resources.

To meet these needs for further information on the nation's resources, the Division works in five general areas.

*River basin planning.* Agriculture is the No. 1 user of land and water. The amount of water available to cities, to industry and to recreational uses depends directly on the way farm and forest interests make use of our watersheds. Equally, the *quality* of our water supply depends on the land manager.

Thus, the nation's water supply for today and tomorrow in good measure flows—both literally and figuratively—from the farm. And



LAND RESOURCES

duce the citrus, vegetable and other farm products grown in the area.

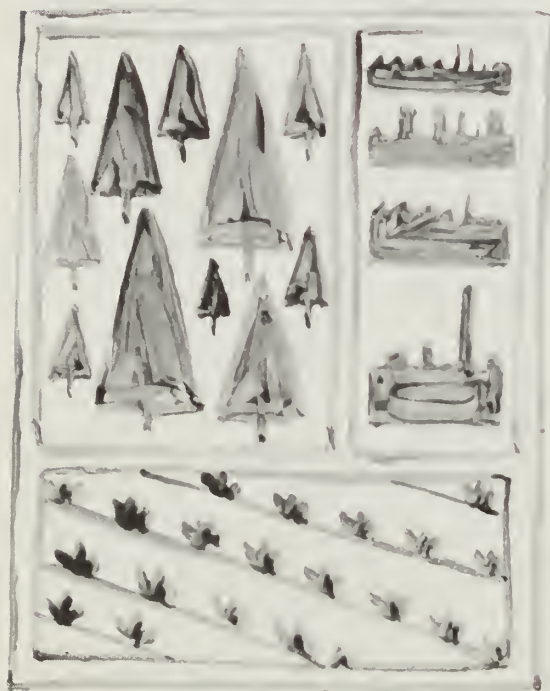
What would be the economic consequences if the area's growth were to be curbed in such a fashion? What would be the impact on established firms and communities? What would the agricultural adjustments be in other regions in cotton and citrus production to offset the loss in



any national plan to develop our water resources must first determine how best to use the water going into farming and other rural uses.

The Division's projections for the Ohio River Basin—as it will look in 1980 and in the year 2010—typify some of the work in this area.

As the work already completed shows, agriculture in the Ohio area will enjoy a large surplus of land and water in 1980. By the year 2010, however, needed output may require substantial amounts of high-cost marginal lands for crop and pasture use. As such land is brought into production, the region will have an increasing



RESOURCES INSTITUTIONS

need for drainage and flood control, especially toward the end of the period. There will also be mounting need for irrigation development as the years go by, especially for the production of vegetables and other high-value specialty crops.

The results of such studies are combined with the work of other agencies on the problems of pollution, flood control, navigation and the like. Together, they provide the basis for a comprehensive appraisal of long-range needs for

development.

*Watershed program analysis.* Smaller than the major river basins but equally important to the nation are the watersheds fed by secondary rivers and streams. More than 8,000 small watersheds have been tagged as needing flood and erosion control, soil conservation and similar attention.

NRED economists have two research responsibilities in this area. The first requires special studies of special problems: analysis of flood damages in small watersheds, benefits and costs of recreation development, local secondary effects of watershed development projects and socioeconomic factors of watershed organizations.

For example, how extensive was recent flood damage in the Upper Rio Hondo watershed of New Mexico? How much would it cost to develop a watershed for recreational use and how much would farmers gain?

Research on the local secondary effects of watershed development seeks answers to such questions as this: If farm operators get a better income as a result of a watershed program, how much will they pass along to the local community? One study showed that for every \$54,362 spent locally by farmers, service stations get \$2,883; grain elevators, \$2,244; doctors, \$1,142; department stores, \$483 and so on.

The second Division responsibility in this research area is to evaluate how well watershed projects work once they are completed. What worked well or poorly in one watershed may help to guide planners in developing another.

For instance, one study showed that farmers and other residents in the Honey Creek watershed of Iowa save over \$20,000 a year, thanks to a program in the late 1950s that has reduced flooding, saved roads and bridges, cut sedimentation damage and intensified land use.

*Water quality.* Much water pol-



WATER RESOURCES

lution is caused by industrial wastes dumped into rivers and streams. But part of it originates on farms due to soil erosion, animal wastes and chemical residues of fertilizer and pesticides.

*Water rights.* In today's complex society, there are constant, often conflicting demands for water for agriculture, for industry and for our fast growing cities and towns.

All states have water rights laws, overlaid by court-made rules and varying interpretations by local governments. To help water users and government planners alike in determining just who has what water rights where, NRED specialists are compiling the water rights laws of 17 western states and Hawaii in one study, as well as the laws of 31 eastern states in another study. The reports will comprise the first national overview of the water rights laws of the separate states.

In addition to its extensive water research program, the Division is concerned with more effective use of our land resources.

*Land utilization.* The United States, counting Hawaii and Alaska, has some 2.3 billion acres of land, plus 43 million acres in lakes and streams. Thus our land supply is fixed—but our needs for



food and fiber and forest keep changing.

NRED's task in this research area is to trace and explain the changes in how we do use our fixed supply of land and to explore more effective ways of managing this vital resource.

For instance, inventories show that 20 per cent of our land area is cultivated cropland, 28 per cent is grassland pasture and range. Another 34 per cent is forest and the remaining 18 per cent is in nonagricultural uses.

Moreover, the research shows that there have been major shifts in land use over the last three decades. An example: 30 million acres or more of poor cropland have been diverted to forest and pasture; concurrently, some 10 million acres of new land have been brought into cultivation.

*Land tenure and income distribution.* Farm management is getting more complex, what with the rise of farm corporations, land contracts, part-ownership and vertical integration, the latter an arrangement whereby the farmer grows-to-order for a predetermined buyer.

Land tenure research delves into the changes in the way land is held and used as a result of these new ways of doing business.

One such study of rural land ownership in the Southeast shows the number, size and use of individual land holdings, along with the changes in the use of land. An offshoot of this study provided a profile of white and Negro landowners in the region. It showed that Negro owners are older on the average than whites. They first acquire land at an older age, have a lower rate of transfer than whites and rely more on inheritance to get their land.

Tenure arrangements also affect the income of farmers. A recent Division analysis showed that the price support program for flue-cured tobacco in North Carolina tended to benefit landowners more than tenant farmers. Re-

turns to labor, and thus income to tenants, went up at only one half the rate at which returns to land, and consequently the owner's income, increased.

*Rural zoning and other land use controls.* All states, over 400 counties and nearly 1,700 towns or townships have zoning ordinances. For instance, there are zoning districts in California to reserve the best farmland solely for farming; even nonfarm rural residences are excluded.

Some states have special districts to conserve forests or water resources or soil. Some have districts to promote camping and other recreation.

Studying the special districts



ENVIRONMENTAL ECONOMICS

and zoning methods already in operation, NRED is able to assess the potential for using such methods to aid economic development in, say, Appalachia, a region where poverty is of national concern.

NRED also studies the problems that farmers face as cities move ever farther into the countryside. Land values go up, but so do farm taxes as subdivisions of new homes spring up on all sides.

Greenbelts are one device used to aid farmers. Greenbelt zoning

requires that individual land holdings in an area be large enough to run an efficient farm. This rules out buying up land for individual home sites and most subdivisions.

However, Division studies conclude that greenbelts, as well as tax easements for farmers, are at best a delaying tactic in most parts of the country. Citizens on the urban-rural fringe of Los Angeles, for instance, showed little interest when surveyed on the purchase of land with public funds to protect open space. They felt it would cost too much and in the end would go under the bulldozer for homesites anyway.

*Outdoor recreation.* Our nation of city dwellers is turning rapidly to outdoor vacations and the need for more recreation facilities is expanding even faster than the population.

This gives many farmers the chance to develop a new source of income. NRED studies show that on-farm recreation can pay off. The key is sound management.

Another study of farm vacations in Ohio suggests that there are opportunities here for farmers and their wives who like people and will cater to the public.

A vacation home on mountain or lake is another dream of many people who live and work in the city. NRED research indicates they should choose their cabin site carefully. A cluster of new vacation homes may be more than the public services of a rural county can handle. A study of one such area in the Blue Ridge Mountains of Virginia suggests that problems may arise in getting adequate water, sewage and garbage disposal, road maintenance and police protection.

In conclusion then, the Natural Resource Economics Division studies the economics underlying the use, past and present, of all our land and water resources. The Division's purpose is to provide analysis and guidelines to help the nation make better use of these resources in coming years. (5)



*Producers dream of promotion campaigns to coordinate activities of shippers, processors, wholesalers and retailers. Reality, by contrast, is a hit or miss affair.*



# UNCERTAIN SALES PITCH

Three to four thousand Maine farmers harvest potatoes. The state, though among the nation's leading producers, accounts for no more than 10 to 15 per cent of total U. S. output.

This is just one example of why advertising and promoting farm products is a frustrating and often thankless task.

In all, there are some 31½ million farms in the nation. They are scattered the length and breadth of the land. No single producer of any farm product carries much weight in the market place.

Group action has been the traditional way around such problems, with state organizations, farmer cooperatives, commodity associations and the like providing some leverage in the market.

Here are a few of the problems involved in advertising and promotion. Some are unique to farm products, some not.

*Uncontrolled supply.* Unlike the industrial firm, a commodity group has little maneuvering room in moving the product from farm to consumer. Pricing, packaging and quality control—essential elements in the marketing mix—are normally beyond the control of a commodity association.

Often as not, individual producers are free to sell whatever they can, wherever they can. The result can demolish a promotion campaign. More than one campaign has foundered when supplies of fresh commodities suddenly ran short, prices sailed upward.

*Uncertain quality.* Inspired by the mouth-watering ad, will the eager shopper find fresh spring lamb when she gets to the store? Or tired mutton?

Making sure that quality on the counter lines up with quality in the ad is essential if you want the customer to come back. It can be the hardest part of promoting

farm products.

It takes a skilled hand to guide a winter pear through the ripening process to the market. The Oregon - Washington - California Pear Bureau uses its field men to educate wholesalers and retailers in the exacting requirements of the fruit. Other producer groups could well follow their example.

*Working with the market.* Much of the promotion work by manufacturers is aimed at helping wholesalers or retailers earn an extra dollar from the product. The purpose, of course, is to induce these handlers to carry the promotion. Often a manufacturer will stretch the marketing margin in the buyer's favor by lowering the original price of the product; sometimes bonus units of the product do the same thing.

Most such devices are beyond the reach of producer associations. For one thing, they rarely take title—thereby control—to the goods, seldom control the channels of distribution. Producers are thus left in an unfavorable position for striking a good bargain with the marketing firms.

By and large, the commodity group must look for some other way to influence the behavior of marketing firms.

One way to develop a stronger demand is to put together a well-designed marketing plan. Such a plan would have to coordinate activities of producers, shippers, processors, wholesalers and retailers. And it would need to be supported by strong consumer advertising and educational programs.

*Problems of packaging.* In the modern food store, where thousands of items line the shelves, packaging more often than not must do the job of the salesman.

But on the average only about half the produce is packaged. And the producer rarely has much to

do with it. The cellophane cylinders of tomatoes, the plastic-wrapped heads of cauliflower, or the five-pound bags of onions are generally the work of the wholesaler or retailer.

Point-of-purchase materials have developed as promotion alternatives to the package, but with haphazard success. Farm groups spend about \$6.7 million a year for the point-of-purchase items they distribute. But studies indicate that a limited quantity is actually used.

*Managers without power.* Too often a commodity organization fails to grant its management the authority to run the show.

Management has not much more control over the budget. Budgets in any given year are determined largely by the size of the harvest and such. Thus, promotion campaigns often are determined by the weather and politics or, to a lesser extent, the mood of producers.

*The potential.* Despite the special problems, promotion campaigns do work for farm products. Take one example: frozen concentrated orange juice.

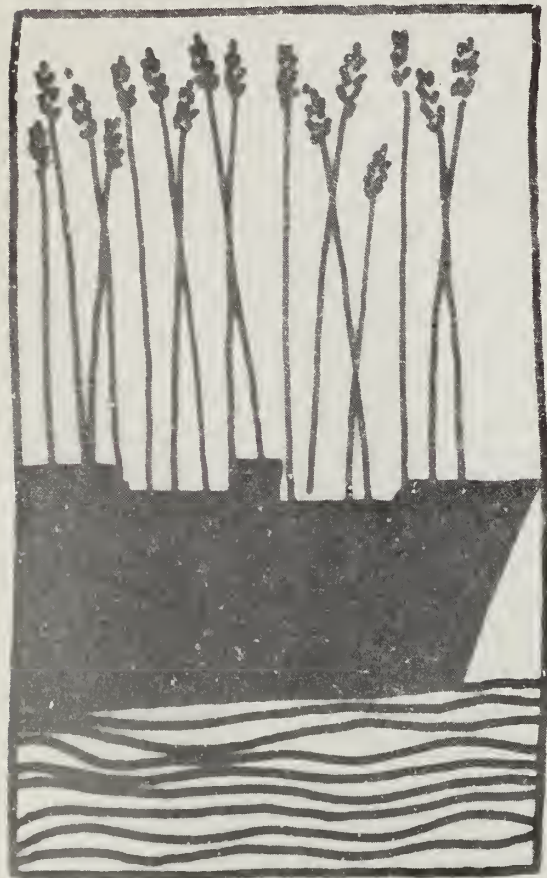
With the help of media advertising, point-of-purchase materials, dealer contests, a consumer "sweepstakes" and about 190 million "cents-off" coupons, the Florida Frozen Concentrated Orange Juice Producers sold off a sizable portion of burdensome stocks. The cost of their campaign ran to \$3.5 million; net returns amounted to \$13.3 million.

The recipe for their success? A high degree of cooperation among producers, processors and the Florida Citrus Commission. The cooperation provided for necessary coordination and control at different levels of distribution.

Sophisticated market intelligence also made it easier to design the appropriate campaign. (6)



# WHAT'S AHEAD FOR U.S. FARM EXPORTS



While the \$6.7 billion level of U.S. farm exports this year is likely to set a new record, it probably won't stand for long. Recent ERS projections of our agricultural exports show them rising to \$8 billion-plus by 1970—with commercial sales for dollars accounting for more than \$6 billion of this total.

Feed grains and feed products likely will become our top dollar earner abroad during 1965-70, if recent projections of foreign production-consumption patterns prove true. However, Japan, Canada and Western Europe—currently our most important export markets—likely will retain their position atop the list of principal U.S. markets in 1970, though exports should grow in size.

Our sales to Japan are projected to climb to \$1.4 billion by 1970, compared with \$900 million in 1965. Exports to Western Europe should rise to about \$3.2 billion, up from \$2.4 billion in 1965.

U.S. commercial exports, mostly to the developed countries of the world, are projected to continue their upward trend through 1970 despite the presence of trade barriers. Rapid rates of economic growth and rising per capita incomes in these countries are expected to boost import requirements significantly, particularly for feed grains and oilseeds, in the next four years.

More money in the hands of consumers in these developed nations is promoting a shift in demand from cereals to meat and livestock products. This shift has already been witnessed in Western Europe and is currently taking place in Japan.

However, many of these countries, particularly Japan, do not have the land resources to meet both the growing demand for meat as well as the demand for other food crops. Consequently, their policy so far has been to develop their own livestock economies based on feed imports, rather than to import livestock products. The United States, as the world's top feed grain and oilseed producer and exporter, stands to benefit from this trend.

Of course, an important factor in projections of our commercial grain trade is the trade between other free world countries and the communist nations.

China became a net grain importer in 1960 and has imported 5 to 6 million tons annually since then. The USSR imported 12 million tons of wheat in 1963 and 9 million in 1965 as drought severely reduced production. Recently, the USSR entered into an agreement with Canada to purchase 9 million metric tons of wheat over the next three years. However, it is likely that the USSR will again become a net grain exporter by 1970.

U.S. concessional exports, nearly all of which go to the less developed nations, are projected to rise to \$2.1 billion by 1970.

Continued income growth and

rapidly rising populations are expected to expand total demand in these less developed countries substantially.

The extent to which imports will rise to meet this increased demand depends on both the export policies of the United States and other suppliers as well as on the import policies of the governments in the less developed nations. Also, a strong commercial market in the developed nations and in the communist countries may be a limiting factor on the amount of food that may be provided on concessional terms.

Here's a list, on a commodity basis, of the projected level of major U.S. exports in 1970:

*Wheat.* U.S. exports, commercial and concessional, are projected to total about 24 million metric tons in 1970, compared with 20 million in 1964/65.

Sales to Japan (currently our No. 1 cash customer and likely to retain that status) should increase to more than 2 million metric tons by 1970 as rising per capita consumption of wheat for food and increased feed use spur demand. However, U.S. exports to Western Europe (presently our second largest dollar market) probably will decline from the 1959-61 level of 3.1 million tons to around 1.7 million in 1970 as a result of the area's emphasis on self-sufficiency.

Our exports to less developed nations (mostly concessional) could increase to about 18 million tons by 1970. This would be about two-thirds of these countries projected import needs, assuming recent trends continue (population growing 2.5 per cent annually; total output, 2.7 per cent; and per capita consumption, 0.5 per cent).

To meet this projected 24-million ton export level, U.S. wheat output in 1970 would have to increase to approximately 44 million metric tons, about 25 per cent above the 1964/65 crop harvest of 35 million. Assuming normal weather, continued increases in yields and allowing for the recent



30 per cent hike in acreage allotments, U.S. wheat output could total 48 million metric tons by 1970. This would be sufficient to meet our projected domestic and export needs and assure an adequate carryover stock.

*Coarse grains.* U.S. exports of coarse grains (all grains except wheat and rice) are projected at 30 million metric tons in 1970—about two and a half times the level in 1959-61 and about 15 per cent above the very high level of exports estimated for 1965/66.

The bulk of our shipments likely will continue to go to our two principal dollar markets—Western Europe and Japan.

For 1970, Western Europe's net import requirements are projected at 28 million tons, up from 18 million in 1964/65. Japan's total imports are projected at 10 million tons—more than double the 1964/65 level.

*Oilseeds.* The world demand for

soybeans is expected to continue strong through 1970 and the United States—far and away the leading producer and exporter—stands to see its exports rise.

Total U.S. shipments in 1970 are projected at 9.6 million tons of soybeans and 3.7 million tons of soybean oilcake and meal.

Japan, the world's largest single country market, is projected to up soybean imports to about 3.4 million metric tons in 1970—about three times the level of 1959-61. We should supply just about 3.0 million tons of this total.

Imports by Western Europe are projected at 5.4 million tons of soybeans and 2.8 million tons of soybean meal in 1970. Our sales to the area are projected at 5.0 and 2.5 million tons, respectively.

*Cotton.* Key elements in projections of U.S. cotton exports in 1970 are the level and effect of world cotton prices on foreign production, consumption and trade.

Since 1962 world prices have been declining as output has outstripped mill consumption and competition from man-made fibers has stiffened. A continued drop in prices could dampen (though not reverse) the upward trend in foreign cotton production and also stimulate foreign mill consumption.

It's possible that U.S. cotton exports will rise to about 5 or 6 million bales by 1970, compared with 3 million in 1965/66. To satisfy domestic needs as well as foreign demand, with stocks reduced to desirable levels, U.S. cotton production in 1970 would need to be around 15 to 16 million bales.

*Tobacco.* U.S. exports of unmanufactured tobacco are projected to rise to about 240,000 metric tons in 1970—13 per cent above the 1965 level—assuming continuation of an export payment and no major changes in relative farm price levels around the world.

However, the world tobacco trade is presently in a state of flux and past trends may not be too indicative of future developments.

A switch to filter cigarettes in many countries has caused a change in the input mix of tobacco and some shifts in our traditional markets. Also, the use of reconstituted sheet tobacco in the U.S. and some West European countries has increased the usage from a given amount of tobacco by making usable parts to tobacco leaves formerly discarded.

The political situation in Rhodesia (our biggest competitor) is another important factor affecting our share of the world tobacco trade. If Rhodesia continues to produce and export at prices comparable to their 1965 level, the U.S. may continue to lose its traditional share in many markets. However, if the current political crisis continues and Rhodesia can't market its production, the United States should be able to increase its present share of world trade. (7)

VALUE OF 1970 U.S. FARM EXPORTS PROJECTED TO BE ONE-THIRD HIGHER THAN 1965'S RECORD LEVEL

| Commodity                             | 1959-61<br>average | 1965         | 1970<br>projected <sup>1</sup> |
|---------------------------------------|--------------------|--------------|--------------------------------|
| Million dollars                       |                    |              |                                |
| Wheat and flour                       | 1,033              | 1,184        | 1,500                          |
| Rice                                  | 123                | 244          | 330                            |
| Feed grains                           | 601                | 1,251        | 1,760                          |
| Feed grains and products <sup>2</sup> | 571                | 1,168        | 1,630                          |
| Prepared feeds <sup>3</sup>           | 30                 | 83           | 130                            |
| Oilseeds and products                 | 578                | 1,167        | 1,590                          |
| Oilseeds                              | 349                | 702          | 1,030                          |
| Vegetable oils                        | 180                | 278          | 290                            |
| Oilcake and meal                      | 49                 | 187          | 270                            |
| Animal products                       | 508                | 707          | 850                            |
| Animal fats and oils                  | 178                | 232          | 260                            |
| Hides and skins                       | 75                 | 109          | 110                            |
| Variety and other meats               | 76                 | 112          | 140                            |
| Poultry meat                          | 51                 | 58           | 60                             |
| Dairy products                        | 128                | 196          | 280                            |
| Nonfat dry milk                       | 49                 | 118          | 180                            |
| Cotton                                | 767                | 486          | 740                            |
| Tobacco                               | 372                | 383          | 440                            |
| Fruits                                | 254                | 313          | 320                            |
| Vegetables                            | 137                | 155          | 170                            |
| Other                                 | 231                | 355          | 460                            |
| <b>Total</b>                          | <b>4,604</b>       | <b>6,245</b> | <b>8,160</b>                   |

<sup>1</sup> Projected using 1964/65 prices. <sup>2</sup> Includes rye grain. <sup>3</sup> Includes some hay and fodder.



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### *Vantage Point*

The American marketing system for farm products—like any other machine in good working order—is rarely noticed and almost never understood.

But USDA specialists, serving as technical aides in foreign lands, often offer fresh insight into our generally successful system.

Herewith, two comments out of a letter from Brazil:

—Grain elevators and storage bins against a midwestern horizon back home—too commonplace to rouse the traveler's interest. But they make the difference between scarcity and plenty. Brazil has ample productive capacity to produce corn and rice for local needs, but it lacks the right kinds of storage facilities in the right places. The result is the same as inadequate production—recurrent local shortages.

—A freight train tying up highway traffic for several minutes—no cause of pleasure to the halted drivers. But a few more freight trains, transcontinental trucks and ocean-going freighters would put Brazil decades ahead in its agricultural progress. As it is, the nation exports corn from its southern ports while northeastern provinces are receiving food aid shipments. Reason: Coastal shipping is too expensive to permit shipping corn economically from one region of the nation to another. Thus, the northeast may be short of food while producers in the central and southern parts of the country try vainly to sell their output. (8)

# THE FARM INDEX

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